

WHAT IS CLAIMED IS:

1. A vehicle mount apparatus having an asymmetrical variable stiffness,
the apparatus comprising:

a cushion member having two cushion block parts each symmetrically arranged
5 about a vertical line and positioned in the fore and aft direction relative to a vehicle
body;

vehicle body brackets each secured at the vehicle body and contacting inclines
of the two cushion block parts;

assembly body brackets each contacting the inclines of the two cushion block
10 parts and mounted thereon with an assembly body;

variable stiffness means so mounted as to vary the stiffness of the two cushion
block parts;

sensing means for detecting the changes of accelerated velocity of a vehicle;
and

15 a controller for receiving a signal from the sensing means to control the variable
stiffness means.

2. The apparatus as defined in claim 1, wherein the variable stiffness
means comprises:

20 an Electro-Rheological (ER) fluid filled in each cushion block parts;
electrode plates each installed to apply electromagnetic fields to the ER fluid;
and

power amplifiers for applying electricity to the electrode plates.

3. The apparatus as defined in claim 1, wherein the variable stiffness means comprises:

a Magneto-Rheological (MR) fluid filled in each cushion block parts;
electromagnets each installed to apply electromagnetic fields to the MR fluid;

5 and

power amplifiers for applying electricity to the electromagnets.

4. The apparatus as defined in claim 1, wherein the sensing means is an accelerated velocity sensor for sensing an accelerated velocity of a vehicle.

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5. The apparatus as defined in claim 1, wherein the sensing means is a speed sensor for sensing speed of a vehicle.

6. The apparatus as defined in claim 1, wherein the sensing means is an engine revolution sensor for measuring revolution of an engine.

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7. A vehicle mount apparatus having an asymmetrical variable stiffness, comprising:

a sensor for detecting a change in velocity of a vehicle component;

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a controller configured to receive output from said sensor; and

a variable stiffness apparatus configured and dimensioned to receive output from said controller and adjust a stiffness of said variable stiffness apparatus accordingly.

8. The apparatus of claim 7, wherein said variable stiffness apparatus is an engine or transmission mount.

9. The apparatus of claim 7, wherein said variable stiffness apparatus
5 further comprises an electromagnet and magneto-rheological fluid.

10. The apparatus of claim 7, wherein said variable stiffness apparatus further comprises an electrode plate and electro-rheological fluid.

10 11. A vehicle mount apparatus having asymmetrical variable stiffness, comprising:
an engine mount including a fluid wherein a stiffness of said fluid can be adjusted.

15 12. The apparatus of claim 11, wherein said engine mount further comprises an electromagnet and said fluid is a magneto-rheological fluid.

13. The apparatus of claim 11, wherein said engine mount further comprises an electrode plate and said fluid is an electro-rheological fluid.

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14. The apparatus of claim 11, further comprising:
a sensor for detecting a change of speed of a vehicle component; and
a controller configured to receive output from said sensor and adjust the stiffness of the engine mount accordingly.

15. The apparatus of claim 11, wherein said engine mount is a transmission mount.